

FIG. 1

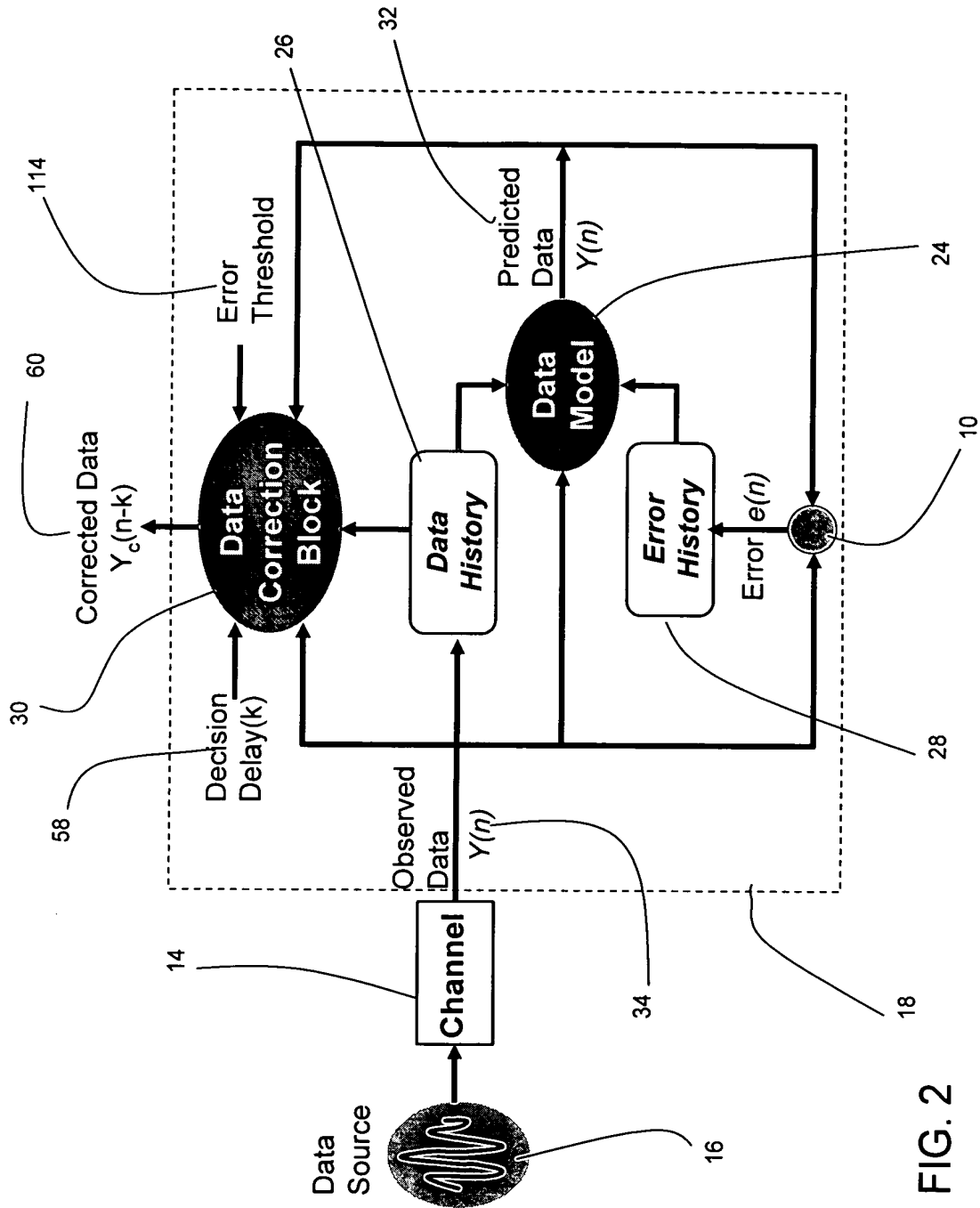


FIG. 2

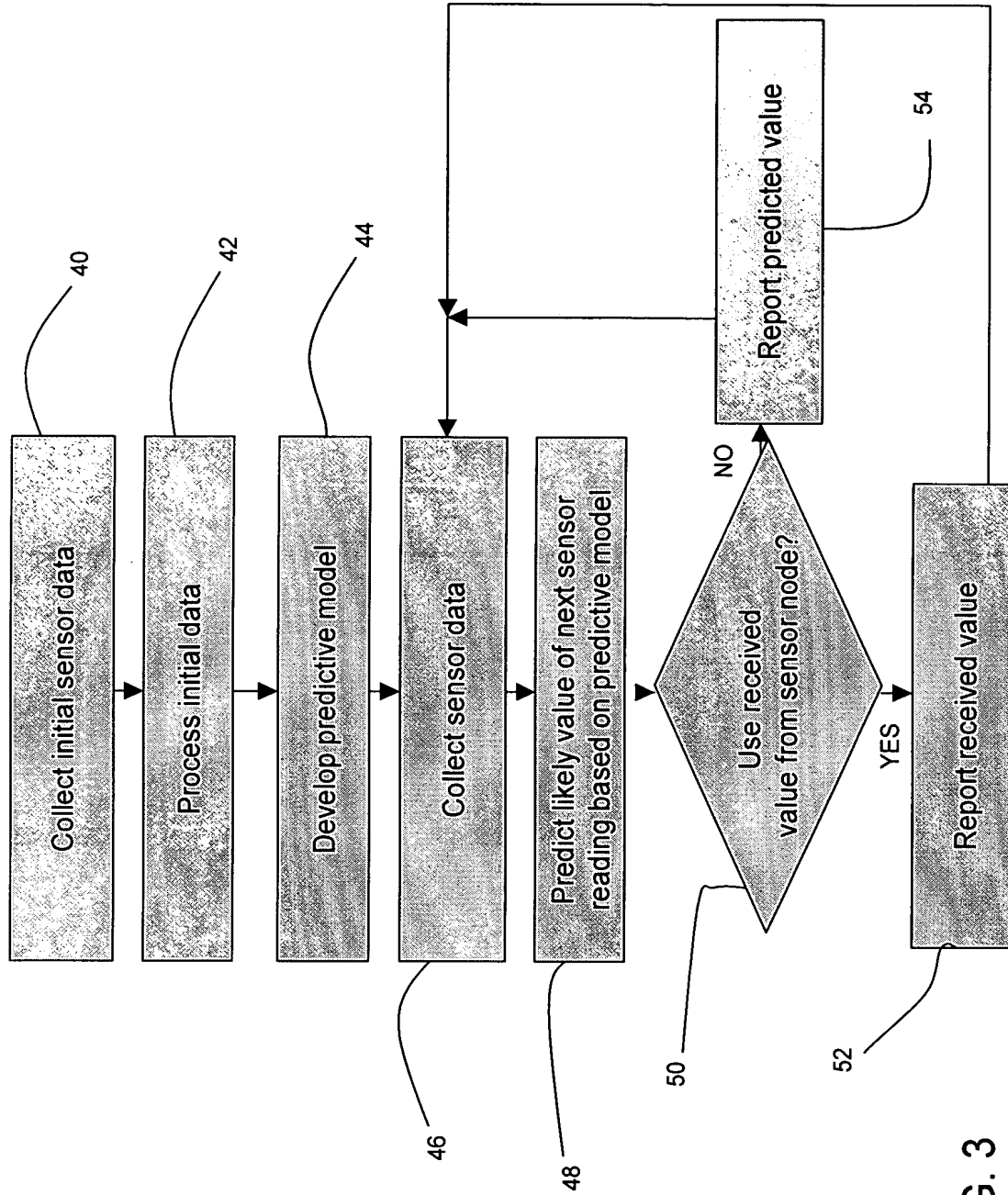


FIG. 3

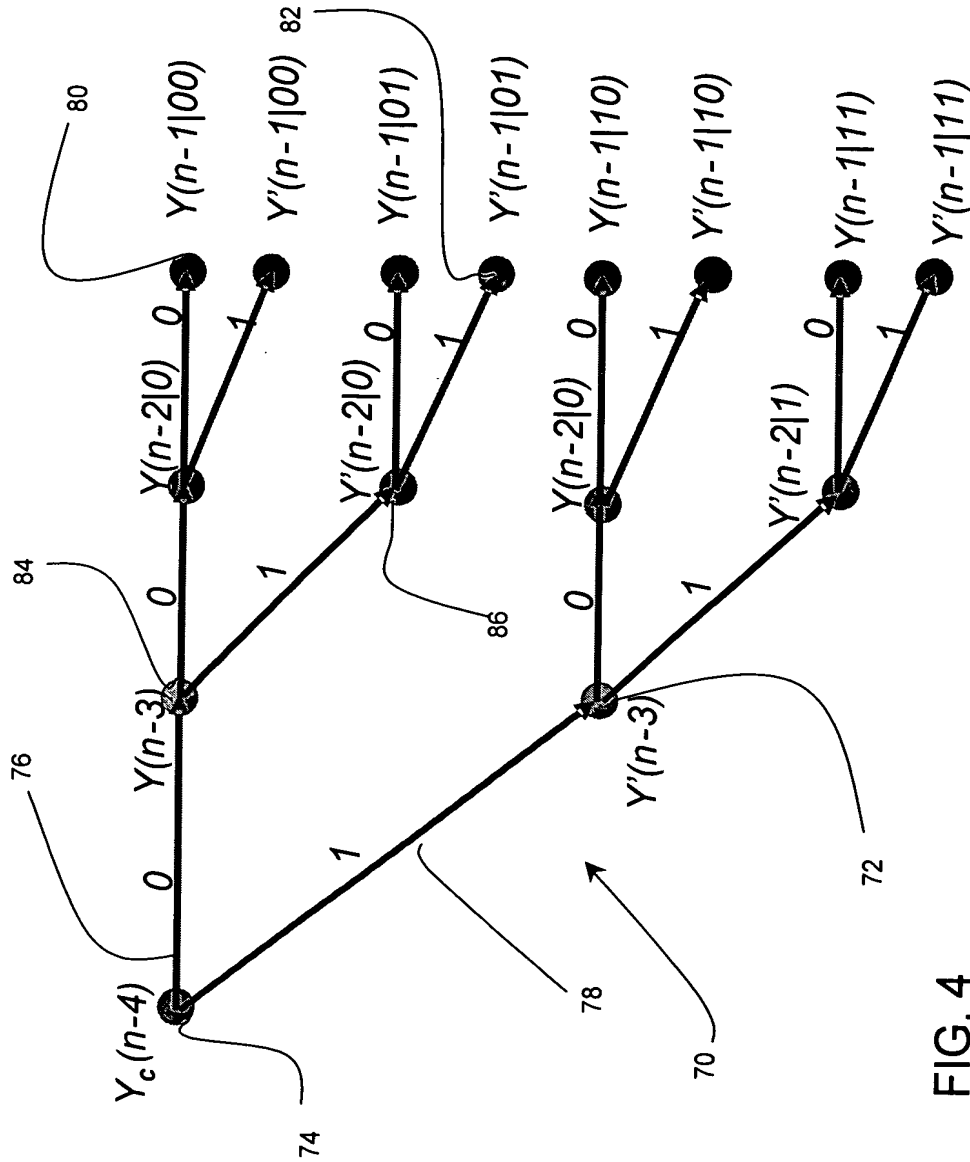


FIG. 4

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90   for each sample at time  $n$ ,
91     observe value  $Y(n)$ 
92   for each path  $i$  from root to leaf in PHT
93      $Y'(n, i)$  = Predict (model, data & error history for path  $i$ )
94      $E(n, i) = Y(n) - Y'(n, i)$ 
95
100    PathErr( $i$ ) =  $\frac{1}{N_i} \sum_{j=n-K}^n E^2(j, i)$ 
101
102    where  $N_i$  = No. of nodes in path  $i$  using predicted values
103    end
104    find  $i = i_{min}$  which minimizes PathErr( $i$ );
105    <Yc( $n-K$ ),  $E(n-K)$ > = updatePHT( $i_{min}$ ,  $Y'(n, i)$ ,  $Y(n)$ )
106
107    end
108
109    updatePHT( $i$ ,  $Y'(n', j)$ ,  $Y(n)$ ):
110    begin
111      find  $s$  = level 1 node containing path  $i_{min}$ 
112        [ out of  $Y(n-K)$  and  $Y'(n-K)$  ]
113      < $y, e$ > =  $Y$  and  $E$  values of node  $s$ 
114      PHT  $\leftarrow$  subtree of PHT rooted in  $s$ 
115      to each leaf node  $j$  of new PHT, add 1st child  $Y(n)$ ,
116      and if  $(|E(n, j)| > ETH)$  add 2nd child  $Y'(n, j)$ 
117      return < $y, e$ >
118
119    end

```

FIG. 5